

This page is mainly introduced the STSF321 Datasheet, including chemical information, mechanical properties, physical properties, mechanical properties, heat treatment, and Micro structure, etc. It also contains the use of STSF321, such as it is commonly used in bars, sheet, plates, steel coils, steel pipes, forged and other materials application.

## Datasheet for Steel Grades Specialsteel STSF321

### STSF321 Standard Number:

| ITEM | Standard Number | Descriptions                                  |
|------|-----------------|-----------------------------------------------|
| 1    | D 4115 (2001)   | Stainless steel forgings for pressure vessels |

### STSF321 Chemical composition (mass fraction) (wt.%)

| Chemical |    | Min.(%) |    |    |    | Max.(%) |    |    |       |
|----------|----|---------|----|----|----|---------|----|----|-------|
| C        |    |         |    |    |    | 0.08    |    |    |       |
| Si       |    |         |    |    |    | 1.00    |    |    |       |
| Mn       |    |         |    |    |    | 2.00    |    |    |       |
| P        |    |         |    |    |    | 0.040   |    |    |       |
| S        |    |         |    |    |    | 0.030   |    |    |       |
| Cr       |    | 17.00   |    |    |    | 19.00   |    |    |       |
| Ni       |    | 9.00    |    |    |    | 13.00   |    |    |       |
| Mo       |    |         |    |    |    |         |    |    |       |
| Ti       |    |         |    |    |    | 5×C□    |    |    |       |
| C        | Si | Mn      | P  | S  | Cr | Ni      | Mo | V  | Ta    |
|          |    |         |    |    |    |         |    |    |       |
| W        | N  | Cu      | Co | Pb | B  | Nb      | Al | Ti | Other |
|          |    |         |    |    |    |         |    |    |       |

Stainless steel forgings for pressure vessels

### STSF321 Physical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 115-234 | $\sigma_b$ /MPa          |
| Yield Strength   | 23      | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 65      | $\delta 5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 123-321 | -                        |
| HRC              | 30      | -                        |

### STSF321 Mechanical Properties

|                  |         |                          |
|------------------|---------|--------------------------|
| Tensile strength | 231-231 | $\sigma_b$ /MPa          |
| Yield Strength   | 154     | $\sigma_{0.2} \geq$ /MPa |
| Elongation       | 56      | $\delta 5 \geq$ (%)      |
| $\psi$           | -       | $\psi \geq$ (%)          |
| Akv              | -       | Akv $\geq$ /J            |
| HBS              | 235-268 | -                        |
| HRC              | 30      | -                        |

### STSF321 Heat Treatment Regime

| Annealing | Quenching | Tempering | Normalizing | Q & T |
|-----------|-----------|-----------|-------------|-------|
| √         | √         | √         | √           | √     |

### STSF321 Range of products

| Product type    | Products             | Dimension         | Processes                             | Deliver Status                                                |
|-----------------|----------------------|-------------------|---------------------------------------|---------------------------------------------------------------|
| Plates / Sheets | Plates / Sheets      | 0.08-200mm(T)*W*L | Forging, hot rolling and cold rolling | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Steel Bar       | Round Bar, Flat Bar, | Φ8-1200mm*L       | Forging, hot rolling and              | Black, Rough Turning,                                         |

|               |                                          |                            |                                   |                                                               |
|---------------|------------------------------------------|----------------------------|-----------------------------------|---------------------------------------------------------------|
|               | Square Bar                               |                            | cold rolling, Cast                | Shot Blasting,                                                |
| Coil / Strip  | Steel Coil /Steel Strip                  | 0.03-16.0x1200mm           | Cold-Rolled & Hot-Rolled          | Annealed, Solution and Aging, Q+T, ACID-WASHED, Shot Blasting |
| Pipes / Tubes | Seamless Pipes/Tubes, Welded Pipes/Tubes | OD:6-219mm x WT:0.5-20.0mm | Hot extrusion, Cold Drawn, Welded | Annealed, Solution and Aging, Q+T, ACID-WASHED                |

**We can produce Specialsteel the specifications follows:**